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**REMARKS**

This amendment is responsive to the office action dated December 22, 2004.

Claims 1-15 were pending in the application. Claim 1 was objected to. Claims 1-15 were rejected. No claims were allowed.

By way of this amendment, the Applicant has amended Claims 1 and 13. Claims 2-12 and 14-15 remain unchanged.

Accordingly, Claims 1-15 are currently pending.

**I. Claim Objections**

Claim 1 was objected to because of a typographical error in line 16. The Applicant has amended Claim 1 by changing "pf" to "of". Withdrawal of this objection is respectfully requested.

**II. Double Patenting Rejection**

Claims 1-7, 8-12 and 13-15 were rejected as being unpatentable under the doctrine of obviousness-type double patenting over US Patent No. 6,827,468 in view of US Patent No. 6,547,423 (Marshall et al.). Since US Patent No. 6,827,468 and the present application are co-owned, the Applicant submits herewith a Terminal Disclaimer to overcome this rejection. Withdrawal of this rejection is respectfully requested

**III. Rejection of Claims under 35 USC 112**

Claim 13 was rejected under 35 USC 112, second paragraph as being indefinite. Specifically, it was stated that Claim 13 recites the limitation "retains said light emitting diode in said recess" and that there is insufficient antecedent basis for this limitation. The Applicant has amended the term "recess" to "alignment guide" referring to a fully defined structural element of the light emitting diode assembly. In view of this

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amendment, Applicant believes that Claim 13 is now definite and respectfully requests withdrawal of this rejection.

**IV. Rejection of Claims 1-3 and 7 under 35 USC 103**

Claims 1-3 and 7 were rejected under 35 USC 103(a) as being unpatentable over US Patent No. 6,541,800 (Barnett) in view of Luxeon Power Light Sources Literature. The Examiner has stated that Barnett discloses a lighting assembly including a light emitting diode package, a mounting device and a lens and that although Barnett does not teach the LED having a heat transfer plate on the rear of the mounting base and the mounting device in thermal communication with the heat transfer plate, Luxeon teaches a heat transfer plate on the rear of the LED and a printed circuit board that acts as a heat sink interface and that the present invention would be obvious in light of the combination of these references.

In applying the cited reference, the distinct elements of a heat sink and the heat transfer plate on the LED has been blurred. Barnett has no disclosure at all related to heat transfer from the disclosed LED package. Further, while Luxeon discloses the heat transfer plate and the incorporation of a printed circuit board that acts as a thermal heat sink interface, this interface is not a heat sink. The Luxeon literature as provided by the Examiner specifically states that the printed circuit board is not a heat sink and that in order to light the LED, for more than a few seconds, an additional heat sinking means must be provided. This is exactly the problem that the present invention has been developed to overcome. While Luxeon provides a high powered LED package, they fully admit that the LED does not include adequate means for dissipating heat, yet do not provide any solution other than a statement that additional heat sinking is required. The printed circuit board provides an interface for the attachment of additional heat sink capacity, not additional heat sink capacity in its own right.

The present invention claims three separate and distinct components, a packaged LED assembly (such as a Luxeon package), a heat sink assembly and an

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optical lens in addition to the luminescent portion of the LED. Further, the Applicant has included limitations relative to the manner in which the LED is interfaced with the heat sink assembly. The separate and distinct heat sink portion of the present disclosure is the component that, according to Luxeon themselves, is critical to allowing the LED to be illuminated for more than a few seconds at a time.

If the Luxeon emitter were combined with Barnett by placing the LED into the Barnett device, the device would fail. Specifically, if the Luxeon emitter were placed in the position of item 10 in Barnett Fig. 10 and installed into the base 254, the Luxeon emitter could only be illuminated for a few seconds at a time. This is because there is no additional heat sinking capacity provided as specifically required by the Luxeon literature. Clearly, a flashlight that can only be illuminated for a few seconds at a time could not be deemed a functional device.

In contrast, the present invention requires as a claimed limitation that a distinct heat sink be included into the assembly. Since the present invention clearly discloses subject matter that is not found within either of the cited references Barnett or Luxeon either alone or in combination, the cited references cannot render the present invention obvious. Further, should the two references be combined without the addition of the auxiliary heat sink capacity of the present invention, the device would fail. Applicant notes that "care must be taken to avoid hindsight reconstruction by using the patent in suit as a guide through the maze of prior references, combining the right reference in the right way so as to achieve the result of the claims in suit." Grain Processing Corp. v. American Maize-Products Corp., 5 USPQ2d 1788 (Fed. Circ. 1988). The Applicant submits that the Examiner has used improper hindsight in reconstructing the invention. To give a skilled artisan each of the cited references alone, without also giving him the particular problem to be solved, i.e. the problem of providing an assembly that includes an LED package, an optical lens and additional heat sink capacity, would not provide any motivation to combine the features to result in the claimed invention. While the cited prior art references may teach a mounting bracket for an LED package and an LED package that is not functional with a heat sink solution, they are completely devoid of teaching the combination of the three critical claimed elements of the present invention.

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The Appellant asserts that the combination of the references relied upon by the Examiner cannot be maintained under §103 because the references are devoid of any teachings relative to their combinability. Further, even if one skilled in the art attempted to combine these references *sua sponte*, the resulting flashlight device would fail due to the lack of auxiliary heat sink capacity.

Accordingly, in view of the fact the claim 1 of the present invention is believed to be allowable over the cited prior art references, the respective dependant claims are also believed to be allowable.

**V. Rejection of Claim 4 under 35 USC 103**

Claim 4 was rejected under 35 USC 103(a) as being unpatentable over US Patent No. 6,541,800 (Barnett) in view of Luxeon Power Light Sources Literature in further view of admitted prior art. The Examiner stated that Barnett and Luxeon disclose the present invention except for a circuit board including control circuitry and that therefore the present invention would be obvious.

As stated above however with regard to Barnett and Luxeon, this combination is lacking in critical structural limitations that are in the present invention as claimed. Specifically, since the base combination is lacking in the necessary auxiliary heat sink capacity, the simple addition of control circuitry does not overcome this defect. Accordingly, this rejection cannot be maintained. Withdrawal of the rejection is respectfully requested.

**VI. Rejection of Claim 5 under 35 USC 103**

Claim 4 was rejected under 35 USC 103(a) as being unpatentable over US Patent No. 6,541,800 (Barnett) in view of Luxeon Power Light Sources Literature in further view of US Patent No. 6,582,100 (Hochstein). The Examiner stated that Barnett

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and Luxeon disclose the present invention except for a the first LED lead in contact with the mounting die and the second LED lead in contact with the control circuitry and that Hochstein provides disclosure relative to the LED connectivity and that therefore the present invention would be obvious.

As stated above however with regard to Barnet and Luxeon, this combination is lacking in critical structural limitations that are in the present invention as claimed. Specifically, since the base combination is lacking in the necessary auxiliary heat sink capacity, the simple addition of the disclosure related the manner in which the leads are attached does not overcome this defect. Accordingly, this rejection cannot be maintained. Withdrawal of the rejection is respectfully requested.

**VI. Rejection of Claim 6 under 35 USC 103**

Claim 6 was rejected under 35 USC 103(a) as being unpatentable over US Patent No. 6,541,800 (Barnett) in view of Luxeon Power Light Sources Literature in further view of US Patent No. 6,547,423 (Marshall). The Examiner stated that Barnett and Luxeon disclose the present invention except for lens having a total internal reflection collector portion and that Marshall provided disclosure relating to this optical lens and that therefore the present invention would be obvious.

As stated above however with regard to Barnet and Luxeon, this combination is lacking in critical structural limitations that are in the present invention as claimed. Specifically, since the base combination is lacking in the necessary auxiliary heat sink capacity, the simple addition of the disclosure related the optical lens does not overcome this defect. Accordingly, this rejection cannot be maintained. Withdrawal of the rejection is respectfully requested.

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**VII. Rejection of Claim 8-10 under 35 USC 103**

Claims 8-10 were rejected under 35 USC 103(a) as being unpatentable over US Patent No. 6,541,800 (Barnett) in view of Luxeon Power Light Sources Literature in further view of US Patent No. 6,547,423 (Marshall). The Examiner has stated that Barnett discloses a lighting assembly including a light emitting diode package, a mounting device and a lens and that although Barnett does not teach the LED having a heat transfer plate on the rear of the mounting base and the mounting device in thermal communication with the heat transfer plate, Luxeon teaches a heat transfer plate on the rear of the LED and a printed circuit board that acts as a heat sink interface and that Marshall provides the necessary disclosure related to the optical lens limitation and that the present invention would be obvious in light of the combination of these references.

In applying the cited reference, the distinct elements of a heat sink and the heat transfer plate on the LED has been blurred. Barnett has no disclosure at all related to heat transfer from the disclosed LED package. Further, while Luxeon discloses the heat transfer plate and the incorporation of a printed circuit board that acts as a thermal heat sink interface, this interface is not a heat sink. The Luxeon literature as provided by the Examiner specifically states that the printed circuit board is not a heat sink and that in order to light the LED, for more than a few seconds, an additional heat sinking means must be provided. This is exactly the problem that the present invention has been developed to overcome. While Luxeon provides a high powered LED package, they fully admit that the LED does not include adequate means for dissipating heat, yet do not provide any solution other than a statement that additional heat sinking is required. The printed circuit board provides an interface for the attachment of additional heat sink capacity, not additional heat sink capacity in its own right.

The present invention claims three separate and distinct components, a packaged LED assembly (such as a Luxeon package), a heat sink assembly and an optical lens in addition to the luminescent portion of the LED. Further, the Applicant has included limitations relative to the manner in which the LED is interfaced with the heat sink assembly. The separate and distinct heat sink portion of the present disclosure is

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the component that, according to Luxeon themselves, is critical to allowing the LED to be illuminated for more than a few seconds at a time.

If the Luxeon emitter were combined with Barnett by placing the LED into the Barnett device, the device would fail. Specifically, if the Luxeon emitter were placed in the position of item 10 in Barnett Fig. 10 and installed into the base 254, the Luxeon emitter could only be illuminated for a few seconds at a time. This is because there is no additional heat sinking capacity provided as specifically required by the Luxeon literature. Clearly, a flashlight that can only be illuminated for a few seconds at a time could not be deemed a functional device.

In contrast, the present invention requires as a claimed limitation that a distinct heat sink be included into the assembly. Since the present invention clearly discloses subject matter that is not found within either of the cited references Barnett or Luxeon either alone or in combination, the cited references cannot render the present invention obvious. Further, should the two references be combined without the addition of the auxiliary heat sink capacity of the present invention, the device would fail. Applicant notes that "care must be taken to avoid hindsight reconstruction by using the patent in suit as a guide through the maze of prior references, combining the right reference in the right way so as to achieve the result of the claims in suit." Grain Processing Corp. v. American Maize-Products Corp., 5 USPQ2d 1788 (Fed. Circ. 1988). The Applicant submits that the Examiner has used improper hindsight in reconstructing the invention. To give a skilled artisan each of the cited references alone, without also giving him the particular problem to be solved, i.e. the problem of providing an assembly that includes an LED package, an optical lens and additional heat sink capacity, would not provide any motivation to combine the features to result in the claimed invention. While the cited prior art references may teach a mounting bracket for an LED package and an LED package that is not functional with a heat sink solution, they are completely devoid of teaching the combination of the three critical claimed elements of the present invention. The Appellant asserts that the combination of the references relied upon by the Examiner cannot be maintained under §103 because the references are devoid of any teachings relative to their combinability. Further, even if one skilled in the art attempted

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to combine these references *sua sponte*, the resulting flashlight device would fail due to the lack of auxiliary heat sink capacity.

Accordingly, this rejection cannot be maintained. Withdrawal of the rejection is respectfully requested.

**VIII. Rejection of Claim 11 under 35 USC 103**

Claim 11 was rejected under 35 USC 103(a) as being unpatentable over US Patent No. 6,541,800 (Barnett) in view of Luxeon Power Light Sources Literature and US Patent No. 6,547,423 (Marshall) in further view of admitted prior art. The Examiner stated that Barnett, Marshall and Luxeon disclose the present invention except for a circuit board including control circuitry and that the admitted prior art disclosed the necessary circuit board and control circuitry and that therefore the present invention would be obvious.

As stated above however with regard to Barnett, Marshall and Luxeon, this combination is lacking in critical structural limitations that are in the present invention as claimed. Specifically, since the base combination is lacking in the necessary auxiliary heat sink capacity, the simple addition of control circuitry does not overcome this defect. Accordingly, this rejection cannot be maintained. Withdrawal of the rejection is respectfully requested.

**IX. Rejection of Claim 12 under 35 USC 103**

Claim 4 was rejected under 35 USC 103(a) as being unpatentable over US Patent No. 6,541,800 (Barnett) in view of Luxeon Power Light Sources Literature and US Patent No. 6,547,423 (Marshall) in further view of US Patent No. 6,582,100 (Hochstein). The Examiner stated that Barnett, Marshall and Luxeon disclose the present invention except for a the first LED lead in contact with the mounting die and the second LED lead



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in contact with the control circuitry and that Hochstein provides disclosure relative to the LED connectivity and that therefore the present invention would be obvious.

As stated above however with regard to Barnett and Luxeon, this combination is lacking in critical structural limitations that are in the present invention as claimed. Specifically, since the base combination is lacking in the necessary auxiliary heat sink capacity, the simple addition of the disclosure related the manner in which the leads are attached does not overcome this defect. Accordingly, this rejection cannot be maintained. Withdrawal of the rejection is respectfully requested.

**X. Rejection of Claims 13-15 under 35 USC 103**

Claims 13-15 were rejected under 35 USC 103(a) as being unpatentable over US Patent No. 6,541,800 (Barnett) in view of US Patent No. 6,582,100 (Hochstein) in further view of US Patent No. 6,547,423 (Marshall). The Examiner stated that Barnett discloses the present invention except for a an LED package with a heat transfer plate on the rear thereof and an optical lens having a total internal reflection collector portion, that Hochstein discloses an LED mounting system with a heat dissipation assembly coupled to the rear of an LED package and that Marshall provides the required optical lens and that therefore the present invention would be obvious.

The present application clearly defines the mounting die as a heat sink. The heat sink has an alignment guide in the rear surface thereof and an aperture extending from the alignment guide to the front surface of the heat sink. A spreader plate serves then to bridge from the heat transfer plate on the rear of the LED package to the heat sink thereby providing a thermal transfer path from the heat transfer plate to the heat sink.

In contrast, the structure in Hochstein provides for the LED to be mounted directly onto the heat sink plate with a retention clip that snaps over the LED package and retains it on the heat sink plate. The Hochstein device does not include an alignment guide to align the LED with a longitudinal axis of the heat sink, it only includes

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an aperture for the luminescent portion of the LED. Further, the retainer clip in Hochstein is simply not the same structure and does not serve the same purpose as the heat sink in the present invention. In Hochstein, the heat is transferred directly from the transfer plate on the LED packaged and into the heat sink plate behind the circuit board. The retainer clip while retaining the LED package in contact with the heat sink does not have any significant thermal mass and does not serve to provide any heat sinking capacity.

The present invention includes a heat sink structure into which the LED package is received. A spreader plate is provided to transfer the heat from the heat transfer plate on the rear of the LED package to the heat sink mass that is adjacent and surrounding the sides of the LED package. Further, the heat sink includes both an alignment guide and an aperture that aligns the central axis of the LED package with a longitudinal axis of the heat sink.

The cited references do not alone or in combination teach or suggest the use of a spreader plate to transfer heat from the LED package to heat sink capacity that surrounds the LED package. Just as above with regard to Barnett in view of Luxeon, there is no means for transferring the heat from the LED package to the auxiliary heat sinking capacity. Since, the present invention clearly includes limitations that are not taught in the prior art, the cited references cannot render the claimed subject matter obvious. Further, since the base independent claim 13 includes subject matter that is not disclosed in the cited references, the dependent claims 14 and 15 are also believed to be allowable. Accordingly, this rejection cannot be maintained in view of the Applicant's amendments to the claims. Withdrawal of the rejection is respectfully requested.

#### **XI. Conclusion**

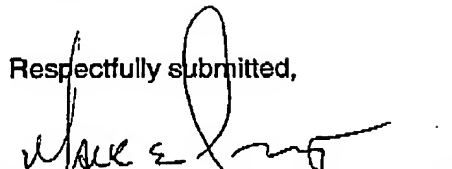
Accordingly, claims 1-15 are believed to be in condition for allowance and the application ready for issue.

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Corresponding action is respectfully solicited.

PTO is authorized to charge any additional fees incurred as a result of the filing hereof or credit any overpayment to our account #02-0900.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Mark E. Tetreault', is written over a horizontal line.

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